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America's Great Outdoors

PETERS



A RECREATION  
STRATEGY PLAN  
FOR  
THE NORTH FORK RIVER

Mark Twain National Forest

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FOR  
THE NORTH FORK RIVER

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Clemson Class of 1989

May, 1990 Final

This paper was prepared as a student project in partial fulfillment of the requirements of the Professional Development for Outdoor Recreation Management Program at Clemson University. It in no way reflects USDA, Forest Service policy nor are the opinions expressed those of anyone other than the author.

## ABSTRACT

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**Title:** A Recreation Strategy Plan for the North Fork River

**Abstract:** Recreation management of the North Fork of the White River is sometimes fragmented, with no clear coordinated recreation program developed around the various river recreation resources. Specifically, these river recreation resources include: a developed recreation area; canoe launches and other river access points; a national recreation trail; a designated wilderness area; a designated semi-primitive, non-motorized area; and finally the river itself. Within the boundary of the ranger district only 25% of the river bank is in public ownership. This report considers the river resource, present recreation facilities and development, budget realities, and relates these respectively with visitor expectations, management perceptions, and changing trends in outdoor recreation to create a river recreation strategy, organizing future planning and project development. The emphasis is toward increased attention to customer service.

This project identifies certain aspects of river recreation management on the Willow Springs Ranger District. By doing so, new employees to the district will spend less time discovering the dynamics of Missouri Ozark rivers, management concerns, and resource management needs, so that consistency in operations and maintenance will be established.

This report is specifically intended for resource personnel, District Rangers, and Recreation Staff Officers. Others who should find it useful may include landscape architects, management personnel of other resource agencies, and affected publics.

**Keywords:** River Recreation, River Management, River Strategy, River Recreation Strategy, Customer Satisfaction.

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## EXECUTIVE SUMMARY

**Title:** A Recreation Strategy For The North Fork River

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**Back-ground:** Both customer service and the pursuit of excellence are mentioned in the National Recreation Strategy as two of our charges. This paper will develop a recreation strategy for the North Fork River on the Willow Springs Ranger District of the Mark Twain National Forest that addresses both challenges.

The problem has been to provide a coordinated strategy from an array of river recreation resources. This array includes: a developed recreation area; access points and canoe launches; dispersed recreation sites; a national recreation trail; a designated wilderness; a designated semi-primitive, non-motorized area; and the river itself.

**Purpose:** In developing a recreation strategy plan four perspectives seem to be significant: the river setting, visitor expectations, management perspectives, and demographic trends. Relating these perspectives to the river recreation resources, an outdoor recreation strategy will be developed that will organize future project planning and design.

By developing a recreation strategy that builds on the National Recreation Strategy, the highest quality recreation experience can be provided without compromising the river resource. This paper will hopefully begin a process that will ensure:

1. Opportunities are identified that will enhance and improve the river recreation setting;
2. Suitable visitor information, signing, and interpretation of the river resource is provided;
3. Visitors seeking to enjoy an outdoor recreation opportunity on the river will find a high quality recreation experience and increased customer satisfaction;

4. Partnerships are pursued with commercial businesses, special interest groups and appropriate federal and state agencies to help achieve these objectives.

#### **Current Situation:**

The Missouri Ozarks contain one of the largest concentrations of springs in the nation. These springs provide not only a consistent water source that keeps water fluctuations minimal, but are also a clean, clear water source.

River access points to the North Fork within the Ranger District boundaries are plentiful. From the north, near the headwaters of the river to the south toward Norfolk Reservoir (a Corps of Engineers reservoir) seven access points exist within 30 miles of river. Of these, three are on National Forest System lands: Osborn Crossing, Hale Crossing, and North Fork Recreation Area. One is on state land managed by the Missouri Department of Conservation and the remainder are on private lands.

A visitors expectations are based on three conditions: 1) the complexity of one's expectations, 2) the individual character of an experience, and 3) the perception of incompatibilities. The six primary user groups that are identified on the North Fork River reflect in their activities these expectations. These six are: local picnickers, local canoeists, local fishermen, non-local campers, non-local canoeists, and non-local fishermen.

Forming a bridge between the user groups and the Forest Service are the local canoe outfitters. The closest many visitors get to interacting with Forest Service personnel are these outfitters. Nine commercial businesses provide canoe rentals in the North Fork River Basin. Most use the North Fork Recreation Area as a major put-in and take-out point.

Management perceptions are influenced by land ownership patterns, use at the North Fork Recreation Area, and forest planning efforts.

Recreation activities of river visitors may reflect the trend toward increased numbers of the two salary family and the make-up of family households in the United States. Increased urbanization has also influenced expectations of river visitors. As a result our developed facilities and the way we present interpretive information will need to compensate for these expectations.

## **Discussion and Recommendations:**

To accomplish the goals of this project, this river strategy plan proposes to: 1) place appropriate high quality signing, 2) present suitable, timely visitor information, 3) coordinate improvements and enhancements of developed recreation areas, 4) offer ideas for an information needs analysis for the Geographic Information System (GIS) so that Forest Service personnel will be able to organize, access, manage and share land-based information, and 5) list opportunities for pursuing customer service and resource protection partnerships with our business, public and governmental neighbors.

These actions are intended to sit in isolation from other jurisdictions or administrative areas of the river. Considering that only 25% of the land bordering the river within the forest boundary is National Forest System lands (a considerably smaller percentage when one begins to reckon with all of the river north of Norfolk Reservoir) this becomes imperative. Program developed with other federal, state and private organizations (i.e., Missouri Department of Conservation, Missouri Department of Natural Resources, Corps of Engineers). Once the ranger district reaches the planning and design phase for individual action items, the public will be invited to participate so that we may gain a better picture of the users needs, how they will be met and, subsequently, what the costs will be.

In the interest of providing the highest quality customer service, the Mark Twain National Forest would do well to generate more information about our visitors to determine and substantiate the signing, visitor information, and facility improvement action items.

By placing high quality signing, and coordinating improvements and enhancement of existing facilities, the river recreation setting can be greatly improved. Offering suitable and timely information will positively supplement our visitors stay on the river. Entering into partnerships with commercial interests and the Missouri Department of Conservation and other individuals can only increase a healthy sense of ownership in the river resource and highlight its intrinsic value to all of us. Preparing a needs analysis for GIS that includes a complete spectrum of information required to adequately manage the outdoor recreation resource on the district will not only make the system work for us, but leave tracks for new district personnel to follow so that management strategy will not have to be continually re-invented.

## 1. INTRODUCTION

Welcome to your National Forests! At least that's what the signs and posters say. The question is: do our river recreation resources communicate that welcome?

It actually becomes many questions: are our visitors able to find recreation opportunities on the ground by following our maps and directional signs, or does it become for them an automotive wilderness experience? Do they find an orderly, clean recreation site, or do they sense that it is suffering from benign neglect? When they need to use the toilets, is it a distressing experience for them, or a mere interruption of their activities? Should they have brought a machete to whack out a place to stay and play, or are they discovering relatively open, inviting locations? Are Forest Service personnel available to provide information and assurance as needed, or do these folks get the idea they are going to be ignored for the duration of their trip? Are interpretive materials and other informational brochures available to pique our visitors interest, or do they have to go to some other federal or state agency to get what we should be providing?

Obviously, telling someone they are welcome to their public lands and actually communicating the message can be light years apart. Fortunately doing it right is not an impossible task. It's actually one of the underlying thrusts of the National Recreation Strategy.

### 1.1 National Recreation Strategy

A Recreation Strategy Plan for the North Fork River, as viewed here, is a logical offspring of the National Recreation Strategy. We are taking the larger framework to develop smaller incremental steps that will provide a satisfying recreation experience for river visitors. Herein lies the opportunity:

"The challenge is to get the American people and their lands together in a way that best meets their growing and ever-changing outdoor recreation needs. We can anticipate a tight budget situation over the next several years. But we should not let that be an excuse for continuing the status quo - we can do better. With that in mind, how can we capitalize on the tremendous public interest and support for outdoor recreation as well as our own strong desire to be responsive to the people? It will require new and different thinking on the part of the Forest Service - and a lot of help from the outdoor recreation community, private sector, State and local government, and the people." (1)

Not only do we challenge ourselves with meeting the outdoor recreation needs of the American people, there is the notion that quality really does matter in carrying out our mission as public land stewards:

"We will be intensely committed in our pursuit of excellence in outdoor recreation. While cooperating with everyone, we will be the best we can be. Quality stewardship and customer service will be our measure of performance." (1)

The subtle beauty of the Missouri Ozarks and the recreation opportunities inherent to the area are becoming more widely recognized - river recreation is an increasingly larger building block in southern Missouri's outdoor recreation reputation. If the Mark Twain National Forest is to continue to provide the unique recreational opportunities for which it is developing distinction, a framework for addressing management decisions which are spurred by this increased use is needed. This management strategy is an attempt to build that framework.

## 2. STATEMENT OF PURPOSE

### 2.1 Problem Statement

The challenge is in providing a coordinated recreation program from a non-coordinated (disaggregate) array of river recreation resources. Specifically, this array of river recreation resources includes: a developed recreation area (camping, picnicking, canoe launch); commercial use of that canoe launch within that developed recreation area; dispersed recreation sites; a national recreation trail; a designated wilderness area; a designated semi-primitive, non-motorized area; and finally the river itself. Within the boundary of the ranger district only 25% of the land bordering the river is in public ownership. The challenge is to apply a growing body of information about river recreation management to a dynamic natural resource. This report will consider the river resource, present recreation facilities and developments and budget realities. By relating these with visitor expectations, management perceptions, and changing demographic trends towards outdoor recreation a strategy will be developed that will organize future project planning and design for the river. Since the world around us is not static, a strategy that is at once comprehensive and dynamic will give the resource manager a tool to provide the highest quality recreation experience without compromising the river resource.

### 2.2 Project Objectives

The North Fork (of the White) River is an Ozark stream receiving increased use but scattered attention. By developing a management strategy that addresses the current situation described in the preceding **Problem Statement** this paper will hopefully begin a process ensuring that:

1. **Opportunities are identified that will enhance and improve the river recreation setting;**
2. **Suitable timely visitor information, signing, and interpretation of the river resource is provided;**
3. **Visitors seeking to enjoy an outdoor recreation opportunity on the river will find a high quality recreation experience and increased customer satisfaction;**
4. **Partnerships are pursued with commercial businesses, special interest groups and appropriate federal and state agencies to help achieve these objectives.**

While a growing body of literature on river problems is providing valuable information to managers, there may be a question about whether it is appropriate to the North

Fork River, or for that matter any river in the Missouri Ozarks. Are the problems here similar to those of rivers studied in literature, and should Forest resource managers move quickly to adopt lessons learned elsewhere? Do forest resource managers and visitors perceive river problems and their solutions similarly? The following pages should provide some clues.

Customer service, a term adopted by the Forest Service not too long ago, has become more institutionalized lately. This is evident by two statements that have become commonplace. On the first count, our letterheads now read "**Caring for the Land and Serving People**". The second has become synonymous with the National Recreation Strategy and explains "**The National Forests, America's Great Outdoors**". We have many opportunities to dovetail both concepts at the national, regional, forest, and district levels. The North Fork River is an ideal resource on which to practice our craft.

### **3. CURRENT SITUATION**

If the resource manager is to develop a strategy that adequately addresses present and future opportunities and needs, four perspectives seem to be significant. First is the river setting, second is visitor expectations, third is management perceptions, and fourth is demographic trends.

#### **3.1 The River Setting**

The North Fork River Basin lies near the Arkansas border of Missouri, and is delineated by high ridges and deep, narrow, almost canyon-like valleys, typical of Ozark topography. Historically, since farming was quite limited because of the topography, livestock raising has been common throughout the area. Few towns of any size are located in the basin, and these are situated on the periphery. In the past, grist mills dotted the area - now only three are still standing. Both large and small springs define the character of the river basin.

##### **3.11 Springs**

The Missouri Ozarks contain perhaps one of the greatest concentrations of springs in the nation. Much of the local history and lore revolve around these springs (2). Springs provide not only a consistent water source, keeping water fluctuation minimal, but are also a clean, clear, attractive water source. Many of these springs furnished the early settlers with their domestic water and stock water supplies, and became sites for grist mills. The grist mills then eventually became central to many community activities. Few springs provide for any of these functions anymore; however, they serve as focal points for ever expanding outdoor recreation activities. On rivers such as the North Fork, where much of the water flow is derived from springs, the character of the river, and subsequently the recreation experience, is influenced by springs. Local flora and fauna use springs, and because of this they are considered on the Mark Twain National Forest a special habitat. Each is managed using a set of standards and guidelines found in the Forest Plan to preserve and enhance their unique contribution to the river and forest. Nine large springs within the North Fork River Basin have been identified by the Missouri Geological Survey (3), four are inside the boundaries of the Mark Twain National Forest, and two of these are located on National Forest System lands. Big Springs (rate of flow: ~11 million gallons/day), and Blue Springs (rate of flow: ~7 million gallons/day). The remaining five springs are south of the forest boundary: three on the North Fork, two on its tributaries.

Owing to the many springs, the river water temperature is relatively cool, especially below Blue Springs. Trout are stocked in the river, and flourish there.

Because of this the state has designated the unimpounded portions of the North Fork and its tributaries in Ozark County as a trophy trout management area.

### **3.12 Natural River Elements**

River environments are said to have five descriptive criteria; the river corridor, its gradient, the amount of sinuosity (or bending), the presence or absence of islands, and the presence or absence of rapids (4). By identifying these elements, the character of the river and subsequently the natural qualities of its environment can be described; this in turn may reflect just what characteristic or combination of characteristics attract visitors. North Fork River's corridor is generally quite narrow, with an occasional widening and forest opening, which provides the user with a feeling of intimacy with his environment. The gradient is low, so that except for a couple of falls and narrows the stream flow is slow. Sinuosity, which refers to the bending in a river, determines the maximum sight distance with which one river user can view another. Limiting visual contact is one way to provide the sense of solitude, even on a busy day. Because of North Fork's moderately high sinuosity, its visual carrying capacity is high. Islands coupled with sinuosity are another way of defining visual carrying capacity and diversity. Therefore, both sinuosity and islands suggest to land managers the visual carrying capacity of a river. Usually the shorter the distance one can see down river the more interesting a river is to float. North Fork has a small number of islands dispersed throughout, mainly concentrated between Osborn Crossing and North Fork Recreation Area. Below the recreation area the occurrence of islands diminishes. Rapids are another criteria that can increase a person's interest and provide an occasional diversion or element of excitement. There are few rapids on the North Fork, and with a couple of exceptions these are minor challenges.

### **3.13 Access Points**

Access points to the river are abundant. From the north, near the headwaters of the river, to the south towards Norfork Lake (a Corps of Engineer reservoir located primarily in Arkansas), seven access points exist within 30 miles of river. Of these, three are on National Forest System lands; Osborn Crossing, Hale Crossing and North Fork Recreation Area (the only National Forest site that is currently developed). One is on state lands managed by the Missouri Department of Conservation and the remainder are on private lands.

Indian Creek enters into North Fork about 3/4 of a mile north of Osborn Crossing, increasing the flow sufficiently to make the crossing a put-in spot for canoeists. Since federal ownership is confined to one side of the river bank at Osborn Crossing, parking is limited. No developed recreation facilities exist. Nearly all of the use is during spring high water flow, and quite limited in the

summer months because of seasonal low water. Access is by a low standard Forest Service road. Most of the use of this segment of the river is for fishing and hunting, with a little trapping.

Hale Crossing is located two miles south of Osborn Crossing, and both sides of the bank are National Forest System lands. Here, since the water level of the river is of consistent sufficient depth, and because access is better than at Osborn Crossing, use increases. While some visitors choose to camp here (even though there are no developed facilities), most folks simply launch canoes here. In the past, plans have been drawn up to provide a small parking area, and to interpret the Wake Cabin site. The cabin has been destroyed, but foundations and the fireplace remain. This plan has not yet been implemented.

Hebron Access is administered by the Missouri Department of Conservation (MDC) and is located three miles south of Hale Crossing. Signed access is by way of State Highway AA on the west side of the river. The state maintains a boat launch and picnic area, but presently MDC has no plans for further improvement of this site.

At the junction of State Highways 14 and 181 with the North Fork is Twin Bridges, with private access on both sides of the river. A commercial business providing canoe rentals, camping and a general store is located here, receiving significant use as a put-in site. A state roadside picnic area facility is located on the other side of the highway, away from the river.

South of Twin Bridges about four miles, at the junction of CC Highway and the river lies North Fork Recreation Area - the largest, most highly developed facility on the river. Construction of the first facilities began in the mid-1960's and continued through the mid-1970's. The canoe launch here is one of the major put-in and take-out points for floaters. Further description of this recreation area can be found in section 3.32.

Blair Bridge, located approximately four miles south of the Forest boundary, is a major take-out point for several commercial canoe rental operations. A low water bridge on State Highway KK provides access to the area, and also requires portaging around by any who care to canoe further down river.

### **3.2 Visitor Expectation**

Visitors expectations are based on three conditions: 1) the complexity of one's expectations, 2) the individual character of an experience, and 3) the perception of incompatibilities (5). First, people have different expectations of the various recreational activities in which they are about to engage; the more attachment with an area and familiarity with an activity type, the more developed the expectation. Second, the individualized character of the recreation experience shapes the expectations of the

user; certain activities are sensory, as in appreciating the natural environment, others are human initiated, by manipulating the physical environment to achieve the intended expectation. Examples of this would be bird watching while canoeing down a river versus having a beer party while out floating. The third condition, perception of incompatibility, is more difficult to capture. According to Jacob, "in outdoor recreation this concept suggests two factors at work: the perception of differences among people's lifestyles and the evaluation that encountering such differences is undesirable." While Missouri has been called the "best microcosm there is of our country" (6), it is surely not the melting pot sometimes described. In recent years people have become more interested in their own ethnic background, taking on more unconventional lifestyles, or may merely be displaying recreation preferences that distinguishes urban versus rural values. All this may engender perceived incompatibilities and reflect itself in inhospitable behavior patterns.

### **3.21 User Groups**

Six primary user groups can be identified on the North Fork River: local picnickers, local canoeists, local fishermen, non-local campers, non-local canoeists, and non-local fishermen. Each of these groups have expectations they bring with them on a trip to the river. By and large, local visitors are in groups (i.e., family reunions, church outings, community organization activities, and neighborhood get-togethers) and are looking for social fulfillment in an outdoor setting. While some members of a group will seek out opportunities for solitude, it is safe to say that the thrust of their expectations will be met if the groups expectations are satisfied.

The fishing public by nature is more inclined to expect solitude no matter if the individual is local or non-local. Few fishermen are satisfied with excessive visual contact with others and prefer to stay away from recreation facilities.

Non-local visitors generally are single families (meaning by this a single family unit, and not necessarily limited to a two parent or one parent household), small groups or individuals. These people, while taking advantage of their own free time during weekends (similar to local visitors) are inclined to visit during other days of the week. Solitude is a greater part of their expectation than group interaction. One exception to this generalization is the non-local weekend camper; many people in this group are multiple families, neighbors, or friends with an element of commonality (i.e., work). These visitors are looking for a mix of the group interaction, solitude, and adventure.

### **3.22 Commercial Businesses**

Forming a bridge between the user groups and the Forest Service are the local canoe outfitters. The closest many visitors ever get to encountering Forest Service personnel are these outfitters. Nine commercial businesses provide

canoe rentals in the North Fork River Basin. Most if not all, use the North Fork Recreation Area as a major put-in and take-out point for their operations. Their primary season of use is between Memorial Day weekend and Labor Day weekend, although good weather will bring out river visitors in spring and autumn months. None of these businesses engaged in canoe rentals is presently required to have a special use permit from the Forest Service. The rationale has been that administration of such permits would be difficult and would not achieve the primary purpose of providing the administration desired at the North Fork Recreation Area.

Congestion on the road leading to the canoe launch, the canoe launch itself, and an adjacent parking lot can at times be overwhelming. With all of the user groups being funneled into the same location at the same time, each bringing their own different agenda, it is not surprising that conflicts do occur and that the resource damage so inevitable proceeds to take place. This damage expresses itself in trampled soils along the riverside, exposed raw stream banks, loss of riparian vegetative communities, and litter.

### **3.3 Management Perceptions**

Land managers, although given the authority and some 'tools' to provide general management direction, still face the difficult task of choosing specific management actions within mandated guidelines. Managers, through their choices of management practices, control definable variables (primarily planning direction, design, and regulations) that make up recreation opportunities and, therefore, influence visitor expectations (7). Less controversial solutions to management problems, those that are as unobtrusive as possible and in which everybody wins, are necessary if the manager is to influence the visitors actions without adversely shaping expectations. This means using indirect means of influencing or modifying user behavior rather than direct means of overt control of users by regulation (8).

#### **3.31 Land Ownership Patterns**

Another aspect regarding access important to any public land manager is the impact of management decisions on the neighboring private land owner. This is more focused on eastern national forests simply because of the interspersed land ownership patterns. Lack of public access contributes to trespass which in turn fosters pervasive and important conflicts between river users and riparian land owners (9). In the North Fork River corridor only 25% of the land is in federal ownership, with the remainder primarily in private ownership. Rivers with multiple ownership generally have fewer management options (10). Communication between the Forest Service and private land owners is essential, not an afterthought. While the southern third within the district boundary is consolidated federal ownership, the remainder to the north is in scattered loose parcels of public land interspersed with private lands. Determining the perceptions and

needs of these landowners will be crucial in gaining the support and trust of these people.

### **3.32 Developed Recreation Areas**

Because North Fork Recreation Area offers the most developed access location on the river, much of the use is channeled into and through this facility. The area is off a paved, well designed state highway and offers a canoe launch, riverside picnic area, 25 campsites (no hook-ups), a small trail system, trailhead access to the Ridge Runner National Recreation Trail, a separate trail access into the Devil's Backbone Wilderness, and one hand-pump well. No electricity, phones, concessions, campsite reservations, campground host services, or barrier free facilities are offered. Ozark County Sheriff's Department assist Forest Service law enforcement officers by furnishing patrols under a cooperative law enforcement agreement. As discussed earlier, nine canoe outfitters are known to use the canoe launch and they depend on this launch as a major put-in and take-out point for their business. None is under special use permit, nor is there a self governing association to coordinate such use. Summer use (between Memorial Day weekend and Labor Day weekend) is busy, especially during the weekends. It is not unusual for all campsites to be filled, the picnic area to be crowded, and the canoe launch approach to be jammed bumper-to-bumper with vans and buses from the canoe outfitters, in addition to the private cars and pick-ups using the driveway and parking lots.

Amazingly enough, even with all the use during busy summer weekends, one large parking lot receives little use. This lot, located across from the Ridge Runner Trailhead is removed from the traffic flow. Therefore, it is most likely that day visitors don't realize it exists.

In 1985 a well designed canoe launch was built, providing parking and a turn around loop for vehicles. In 1986 a 100 year flood destroyed the launch. The district decided not to rebuild the canoe launch to the same degree, and instead cleared away the debris and graded in the present gravel access road and launch.

### **3.33 Forest Planning Efforts**

The Mark Twain National Forest is operating with an approved Forest Land Management Plan and completed Opportunity Area Analyses (Step 2 of Integrated Resource Management - IRM). Three opportunity areas generate management direction for the North Fork River corridor; 1) Devil's Backbone Wilderness - Management Prescription 5.1; 2) Steam Mill Hollow semi-primitive, non-motorized area - Management Prescription 6.1; 3) North Fork River Corridor special area - Management Prescription 6.3. Probably the most significant finding for river corridor is the determination within the special area oppor-

tunity area analysis that the river within the forest boundary should be considered two segments; milepost 1 to 18 and milepost 18 to 30. (Milepost 18 is Hebron Access.) The opportunity area analysis recommends the first 18 mile segment for other than national classification based on a higher frequency of road access, buildings and high impact of agriculture and the last 12 miles for national recreation river classification. Even so, to avoid jeopardizing consideration for eventual classification, all National Forest System Lands within the corridor will be managed to at least meet the national recreation river classification. See Appendix A for Management Prescriptions and Desired Future Conditions for National Forest System lands adjacent to the North Fork River.

### **3.34 Conflicts**

In a survey of river users and managers in the southern Appalachians (9), Forest Service land managers ranked access as the most important social conflict associated with river recreation, followed by inadequate recreational development, and last, conflicts between user groups. An assessment of commercial business and recreation visitors perceptions of user conflicts would be helpful to determine if these findings will be useful for planning purposes on the Mark Twain National Forest and the North Fork River.

### **3.4 Trends**

With the growth of the two salary family, discretionary income has risen while couples find it difficult to schedule the traditional two week vacation together. As a result we are witnessing the rise of the extended weekend excursion.

Households look different than they did as little as twenty years ago. By 1986 family households made up 71.8% of the population in the United States. Two person households made up 31.3% of the total, followed by 18.2% three person households, and 15.6% four person households. Interestingly enough, 28.2% of the population of the nation are non-family households (11). There is an increasing trend towards even greater urbanization of this population. Baby-Boomers are barreling along towards middle age, with the associated settling down that goes along with family rearing.

On the Forest level, more data is needed about our recreation visitors for us to identify their needs and expectations. Armed with this sort of information base, planning, design and customer service efforts can be adequately tailored to provide a satisfying Missouri Ozark outdoor experience.

### **3.41 Facilities**

What does all this mean for the land manager, and more specifically, the Mark Twain National Forest? Some rudimentary conclusions can be made. First may be the assumption that with an extended weekend, families will be more inclined

to have a specific destination already selected when leaving home. With this in mind, there may be more of an attraction to sites that offer reservations rather than first-come-first-served, coupled with less inclination to travel hundreds of miles to reach the recreation site. Having children along may preclude unnecessarily 'roughing it', with an increased perceived need for a newly defined set of basics. These basics may well include water and electrical hook-ups, showers, flush toilets, recreational vehicle parking, sewer dump stations, programming (or at a minimum interpretation), and separate play areas for children and teen-agers (12). The forest environment may come to be seen as a backdrop for activities rather than the focus of these activities.

### **3.42 Interpretation**

With increased urbanization, more people will live in an environment that is culturally distant from rural settings. This can be a problem, but is certainly also an opportunity for interpreting the forest environment. It may mean going beyond telling the 'Forest Service Story', towards telling the history, lore, geography, geology, flora, and fauna of the Missouri Ozarks. Outdoor recreation enthusiasts have become accustomed to quality interpretation; other federal land management agencies such as the National Park Service, Corps of Engineers, and Tennessee Valley Authority have discovered this long ago. While the Forest Service has many excellent examples within the National Forest System, application of basic, quality interpretation has been inconsistent on the Mark Twain National Forest. However, there is evidence that a new commitment is developing among forest personnel towards interpretation.

#### 4. RESEARCH METHODS

During the development of this management strategy several methods were used to unearth and capture pertinent information. There is a wealth of information available about river recreation, general river management, and river planning. Deciding on the subject was easy; limiting it has been the challenge. The art of river management is not static, as reflected in the large number of research studies, management plans, assorted forums and symposiums given over to rivers and their management opportunities and concerns.

The first step was to conduct a literature search. To properly construct, enter and run the literature search, the librarians of the Karl E. Mundt Library of Dakota State University were consulted and provided tremendous help. To facilitate the search process and ensure good results, a problem statement was drafted and a reference interview was conducted by the librarian who was to conduct the search. Three search paths were used: 1) DIALOG an on-line database vendor, 2) Academic Index - Infotrac, a CD-ROM periodical index, and 3) the South Dakota Library Network, an on-line library catalog. The most useful products were obtained from on-line database searches. Keywords (or descriptors) identified during the reference interview were entered into the various systems; some avenues of investigation proved more profitable than others. We began by searching for "river management plan", and our best success, both in quality and quantity, was in the AGRICOLA database. AGRICOLA contains citations of publications relating to all aspects of agriculture and forestry as compiled by the National Agricultural Library. Other key words were also used, including: "rivers-recreation", "rivers-canoeing", and "rivers-management". With print-outs in hand, the next step was selection of possible references; including books, articles, plans, and symposium proceedings. Selection was simplified by the inclusion of an abstract which briefly describes the articles content. Then the selected references were sent to the Government Documents section of the Ellis Library of the University of Missouri - Columbia. Reprints were obtained. The final tasks were to read, analyze, and evaluate the information presented in them.

Additional information about management direction, standards and guidelines was found in the *Mark Twain National Forest Land Management Plan*. The desired future condition for the river corridor was found in the Opportunity Area analysis (Step 2, Integrated Resource Management) for the North Fork River Corridor. Proceedings from River Recreation Management and Research Symposium (24-27 January, 1977; Minneapolis, Minnesota) and 1985 National Outdoor Recreation Trends Symposium II (24-27 February 1985, Myrtle Beach, South Carolina) proved to be excellent resource material.

Personal observations from Mark Twain National Forest employees also furnished insight about past management issues and concerns that surround river management in general, and the North Fork River in particular.

Finally, class notes, handouts, and papers from the 1989 Outdoor Recreation Short-course at Clemson University, South Carolina provided some exceptional leads for further information and ideas.

In the course of my research, it quickly became apparent that sociology and trends are of as much importance for successful river recreation management as laws, regulations, and natural and biotic considerations. All these considerations contribute to the wholeness of management needed to allow the action items, listed in Chapter 5, to work.

## 5. DISCUSSION AND RECOMMENDATIONS

Of what magnitude and importance to the Forest Service are the preceding chapters? What is to be done? Are there any risks? And finally, what is the scope of application?

To accomplish the goals listed in the statement of purpose, this river strategy plan proposes to: 1) place appropriate, high quality signing; 2) present suitable, timely visitor information; 3) coordinate improvements and enhancements of developed recreation areas; 4) offer ideas for an information needs analysis for the Geographic Information System (GIS) so that Forest Service personnel will be able to organize, access, manage and share land-based information; and 5) list opportunities for pursuing partnerships.

These action items are not intended to sit in isolation from the other jurisdictions or administrative areas of the river. Considering that only 25% of the land bordering the river within the forest boundary is National Forest System lands (a considerably smaller percentage when one begins to reckon with all of the river north of Norfolk Reservoir), this becomes imperative. Program development will be coordinated with other federal, state agencies, and private organizations (i.e., Missouri Department of Conservation, Missouri Department of Natural Resources, Corps of Engineers). Once the district reaches the planning and design phase for individual action items, the public will be invited to participate so that we may gain a better picture of the users needs, how they will be met and, subsequently, what the costs will be.

In the interest of providing the highest quality customer service, the Mark Twain National Forest would do well to generate more information about our visitors to determine and substantiate the signing, visitor information, and facility improvement action items.

### 5.1 Signing

Many of the forest visitors to the Mark Twain National Forest are from urban areas, and are therefore not likely to be familiar with the location of some of the places they would like to visit. Too often Forest Service personnel have gauged the need for directional signing based on their own familiarity with an area, and not that of the visitor. Sometimes it takes a good break for the potential visitor to find what they are looking for. In these days of tight budgets, precious funding is steered toward 'hard' targets, bypassing the seemingly nice-to-do projects; a category considered by some, that signing might fit into. Sometimes roadside signing is available, but site specific signing is not; the reverse is also evident in a number of situations. While we do have a new visitor recreation map on the Mark Twain, a map by itself can be difficult to use without assurance signing. Freighted with all this baggage, it is little

wonder that our forest visitor's expectation of a high quality outdoor experience is lost early in the trip. Presently, the engineering staff on the Mark Twain National Forest has been working with the Missouri Highway and Transportation Departments to place signing to National Forest recreation sites. One of these sites to receive such attention is the North Fork Recreation Area. To augment this initiative, additional directional signs, portal entrance signs, and Devil's Backbone Wilderness signs are proposed. Since the vast majority of the non-hunting wilderness visitors hike to the North Fork River, this is arguably the most alluring feature of the wilderness. Therefore, suitable signing at the trailheads is an appropriate action item.

In addition to roadside signing, signing along the river directed at the floaters would not only help orient the river visitor, but add to their overall enjoyment of the North Fork. Such signing would include river access points, Forest and Wilderness boundaries and other areas of interest.

Listed below is a broad set of action items designed to provide high quality, appropriately placed signing for potential visitors. Benefits of signing are not limited to those whose pleasure is the North Fork River, but advantages will seep into other perspectives for identifying National Forest System lands and their natural resources.

## 5.12 Signing Action Items

Location	Cost
<b>A. Portal Signs</b>	
1. CC Highway	
a. East Entrance	\$ 500
b. West Entrance	\$ 100
c. East Leaving	\$ 100
d. West Leaving	\$ 100
2. 14 Highway	
a. East Leaving	\$ 100
b. West Leaving	\$ 100
<b>B. Directional Signs (To North Fork Recreation Area)</b>	
a. West Plains (Jct. 14 & 63)	*
b. Dora (Jct. 14 & 181)	*
<b>C. Devils Backbone Wilderness Trailheads</b>	
1. McGarr Ridge Trailhead	
a. Trailhead Desk	\$ 75
b. Bulletin Board	\$ 50
c. Entrance Signs	\$ 200
2. Raccoon Hollow Trailhead	
a. Trailhead Desk	\$ 75
b. Bulletin Board	\$ 50
c. Entrance Signs	\$ 200
3. Collins Ridge Trailhead	
a. Trailhead Desk	\$ 75
b. Bulletin Board	\$ 50
c. Entrance Signs	\$ 200
4. River Corridor	
a. Osborn Crossing	\$ 100
b. Hale Crossing	\$ 100
c. Hebron Access	\$ 100
d. Forest Entrance (at the Howell/Ozark County Line)	\$ 100
e. Wilderness Entrance	\$ 100
f. North Fork Recreation Area	\$ 100
g. Leaving Wilderness/Forest	\$ 100
<b>Total</b>	<b>\$ 2675</b>

\* Missouri Highway and Transportation Department to provide.

## 5.2 Visitor Information

Once the visitor has arrived at a destination, a courteous and welcoming practice is to provide accurate, timely information. This goes beyond telling these folks what they cannot do; it means offering good information about the area - the history, flora, fauna, geography, what to do, and where some other nearby attractions can be found are a few suitable details. Not only the content of the information we offer, but also how it is presented, speaks worlds about our own attitudes towards our guests.

To help district personnel in their interpretation exercises, an easy to use attractive format tool is being developed by Margaret Dryden (shared service archeologist, stationed at the Willow Springs Ranger District) and myself. These frames (as we are calling them) will offer a quality presentation of interpretive information in a format that can be easily used on all administrative levels and in each resource area. They can provide district and forest wide continuity in our signing. Using national themes, we have designed eight frames - seven of these are within the scope of this project. The eight themes are: "Windows on the Past" (Cultural Resources), "Animal Inn" (Wildlife), "Rise to the Future/Fish Your National Forest" (Fisheries), "Change on the Range" (Rangeland Management), "Prevent Forest Fires" (Fire Prevention), "America's Great Outdoors", "Scenic Byways" (Recreation), and one for the Devil's Backbone Wilderness. Significant stylistic elements of each frame are similar enough to provide continuity should two or more interpretive bulletins be posted in close proximity to each other. See Appendix B for examples. Several advantages exist with this interpretive signing tool:

1. Preparation of the frames is so easy and flexible that they may be created at the district level or they may be professionally reproduced by a lithographer.
2. The frames may be reproduced on paper, plastic, cardboard, fiberglass, mylar or metal.
3. There will be a continuity in presenting interpretive materials that transcends resource areas and district boundaries.
4. The frames may present original narratives, properly referenced previously published text and illustrations, excerpts from other agency publications, as well as photographs.
5. Signs may be updated as the need and opportunity warrants. A paper sign on a campground bulletin board may be upgraded using a professionally manufactured fiberglass sign if funding becomes available to the district.

6. Widespread use of the frames will provide uniform and easily recognized signs to the public.

Another tool to support and guide selection of interpretative material is a public involvement form developed by shared service archeologist Dryden. With her permission I have edited the document to more clearly reflect the situation for the North Fork. (See Appendix C.) We will then survey people interested in the river resource to help determine subject material that will catch our visitors attention. Since this survey has been prepared for, and is partial fulfillment of the requirements for the field project of the Professional Development for Outdoor Recreation Management Program at Clemson University (and, therefore does not reflect USDA, Forest Service Policy), Office of Management and Budget approval will not be necessary for its use.

Possible interpretive topics could include: Hammond Mill Civilian Conservation Corps Camp (history, accomplishments and legacy), the Devil's Backbone Wilderness and Steam Mill Hollow semi-primitive area (attributes and management objectives), local wildlife and plants, river dynamics, geology, geography, and area history.

To aid in either the interpretive, instructive, or regulatory perspective of visitor information signing, certain bulletin boards could be set apart for river information: the canoe launch at the North Fork Recreation Area, two springs (Big Springs and Blue Springs), and at Hale Crossing. One bulletin board each could be set up at Twin Bridges and Dora in a partnership with two local businesses, and another at Hebron Access in partnership with the Missouri Department of Conservation.

The following list includes not only exploring interpretive opportunities, and the organized use of bulletin boards, but also includes a canoe trail brochure for the North Fork, and a proposal for an Information Center at the North Fork Recreation Area. The brochure should include the entire river north of Norfolk Reservoir, cooperating with the Missouri Department of Conservation, Missouri Department of Natural Resources, and the Corps of Engineers.

## 5.21 Visitor Information Action Items

A. Bulletin Boards	
1. Canoe Launch Bulletin Board	\$ 25
2. Big Springs Bulletin Board	\$ 25
3. Blue Springs Bulletin Board	\$ 25
4. Hebron Access (Co-op w/ MDC)	\$ 100
5. Twin Bridges (Co-op w/ Owner)	\$ 100
6. Dora (Co-op w/ Private Business)	\$ 50
7. Hale Crossing	\$ 100
B. Brochures	
1. Canoe Trail Brochure	\$3000
C. Information Center (North Fork Recreation Area)	
1. Map of Area (fiberglass/wood/or metal)	\$ 500
2. Interpretive Sign	\$ 500
3. Bulletin Board Structure	\$ 750
D. Interpretation Opportunities	
1. Survey	-----
2. Planning	
a. Archeologist	\$1400
(GS-11, 1 pay period)	
b. Landscape Architect	\$1200
(GS-9, 1 pay period)	
c. ORA (Other Resource Assistant)	\$1400
(GS-11, 1 pay period)	
3. Plan Implementation	---
4. Interpretive Frame Implementation	\$ 200
<b>Total</b>	<b>\$9375</b>

### **5.3 Improvement/Enhancement of Developed Sites**

The North Fork Recreation Area is the premier developed recreation facility on the North Fork River, supplying opportunities for a large spectrum of activities. It is a well designed site that with some additional improvements and enhancement of present facilities could find steady use throughout the week instead of the present situation - a burst of activity limited to the weekend. By simply offering two of the improvements listed below (i.e., water and electrical hook-ups) the district could more fully take advantage of the reservation system offered by MISTIX, should the forest decide to commit itself. North Fork Recreation Area will, in the foreseeable future, continue to be the focus of the majority of river recreation use on the North Fork River. There are advantages both to the forest visitor and Forest Service in having such a development; visitor safety and protection are more easily accommodated, and protection of resources and facilities is provided. Water and electric hook-ups would make the recreation area more attractive to potential campground hosts, allowing us to provide yet another service to our visitors.

1990 has been declared "The Year of the Sweet-Smelling Toilet". With four double vault toilets in the North Fork Recreation Area, this site is a prime candidate for renovation. A representative from the Mark Twain will attend the Eastern Region workshop and will bring back ideas to implement so that we may be able to get the stench out of the stalls. A trailer waste station would provide an opportunity for visitors to get rid of their grey waste water, other than dumping directly on the ground at the camp sites.

Also listed in this section is an action item directed at providing better canoe access further upstream at Hales Crossing. Design work was completed for such a facility in 1974, but it was never built. The plan called for five designated parking sites, fencing, and signing. With a couple of minor modifications the project may yet be completed.

Obviously a few of the projects listed below are major capital investments, and will require a higher level of planning and design than some of the other action items. However higher quality customer service can still be realized by implementing the remainder of this project list. Also, barrier free design principles will be adopted at each opportunity so that the needs of this segment of the recreating public can be met.

### 5.31 North Fork Recreation Area Action Items

A. Canoe Launch Site	
1. Reconstruct Launch/Dock	\$ 2500
2. Realign Parking Area	\$ 2500
3. Sign Designated Trophy Trout Area	\$ 50
4. Separate Floater Camp	\$ 5000
B. Picnic Site	
1. Horseshoe Pits	\$ 100
2. New well	\$20000
3. 'Sweet-Smelling Toilets' (2)	\$ 600
4. Rustic Children Play Equipment	\$ 5000
C. Blue Springs Site	
1. Re-install Nature Trail	\$ 500
2. Devil's Backbone Wilderness Sign	\$ 200
D. Ridge Runner National Recreation Trail Trailhead	
1. Pack - In, Pack - Out Sign	\$ 75
2. Trailhead Desk	\$ 150
E. Other Trails	
1. Riverside Trail	
a. Signing	\$ 200
D. Camping Loops	
1. Pressurized Water System	\$ 5000
2. Water Hook-ups (Dogwood Loop)	\$ 3000
3. Electricity to Recreation Area	\$15000
4. Electric Hook-ups (Dogwood Loop)	\$ 3000
5. 'Sweet-Smelling Toilets' (2)	\$ 600
6. Trailer Waste Station	\$10000
7. Camp Site Impact Areas	\$ 3000
8. Group Camp Area	\$ 5000
<b>Total</b>	<b>\$81475</b>

### 5.32 Hale Crossing Access Action Items

A. Planning	\$ 1200
(GS-9 Landscape Architect, 1 pay period)	
B. Implementation	
1. Parking Area	\$ 1100
2. Fencing	\$ 500
3. Signing	\$ 900
<b>Total</b>	<b>\$ 3700</b>

## 5.4 Geographic Information System

In this 'Information Age' in which we now live, technology is a tool, and information is a resource. Structuring data is necessary if we are to locate information that will allow us to plan, develop a comprehensive program of work, and document past action. The Forest Service has committed itself to the development of a geographic information system (GIS) technology as a tool to simplify storage, retrieval, analysis and presentation of land based data. Simply put, GIS will be able to draw upon other databases for baseline information, then develop the desired outputs. Since the GIS structure does not dictate the information to be collected and utilized, an information needs analysis will help determine the data required by the Mark Twain National Forest to manage its recreation program; rivers, developed and dispersed sites in general; and the North Fork River corridor in particular. There are three categories of information: existing environment, management plans and direction, and implementation and monitoring. For the scope of this project the existing environment category will be considered. Within this category are three sub-categories: natural, cultural, and status. Each of these sub-categories has a series of components. Following is an outline of the sub-categories and components within the existing environment category that are pertinent to outdoor recreation and, more specifically, the North Fork River corridor. Since there is quite a difference in how data is collected, stored, and the cost of doing so, each suggested entry is indicated by type. Map data are locations, boundaries and such details; tabular data are numbers and words. Listed in **bold type** are suggested data for entry into the GIS framework.

### 5.4.1 Information Needs Analysis Action Items

- A. Existing Environment Category
  1. Cultural Sub-Category
    - a. Recreation Setting Component
      - i. **Existing Sites** (map data)
      - ii. **Potential Sites** (map data)  
- proximity to water, slope, access, etc.
      - iii. **Dispersed Recreation Inventory** (map data)
      - iv. **ROS Classifications** (map data)
    - b. Historic/Prehistoric Component
      - i. **Prehistoric Sites** (map data)
      - ii. **Historic Sites** (map data)
    - c. Socioeconomic (Demographics) Component
      - i. **Population(s)** (tabular data)
      - ii. **Growth** (tabular data)
  2. Natural Sub-Category
    - a. Water Component
      - i. **Quality and Flow** (tabular data)
      - ii. **Uses and Rights** (tabular data)
      - iii. **Structures Inventory** (map data)
      - iv. **Watershed Instrumentation Sites** (map data)

3. Status Sub-Category
  - a. Land Line Location Component
  - b. Ownership Component
  - c. Use Restriction Component
  - d. Encumbrances/Partial Interests Component

## **5.5 Potential Partnerships**

Partnerships are a tool - one that promotes a close win-win association with our business, public and governmental neighbors. When properly used, a well-thought-out program of partnerships can create a sense of ownership that contributes to providing quality customer service and resource protection. For purposes of this project therefore, each partnership opportunity will be so classified.

Customer service partnerships will be developed primarily with the commercial businesses in the area (i.e., canoe outfitters). The objective will be to provide timely information to the river visitors before they even dip a paddle in the river. Since these businesses are a linkage between the visitor and the Forest Service, their commitment is essential.

Resource protection partnerships will be made primarily with individuals, groups, and the Missouri Department of Conservation. Recently MDC has initiated a program to clean up and improve resource damaged areas on Missouri streams, calling the program "Streams for the Future". By entering into this partnership with the state, the Forest Service will be able to tap into a larger pool of ideas, information, and interested volunteers.

Though most action items are repeated from previous lists, they are ones that especially lend themselves to developing partnerships. Some of them are complex, requiring significant commitment of time and resources, others are more simple. Each can help provide better customer services and resource protection.

### **5.51 Partnership Action Items**

- A. Customer Service Partnerships
  1. Twin Bridges Bulletin Board (5.21, A. 5)
  2. Dora Bulletin Board (5.21, A. 6)
  3. Canoe Trail Brochure (5.21, B. 1)
- B. Resource Protection Partnerships (With Missouri Department of Conservation, groups or individuals)
  1. Hebron Access Bulletin Board (5.21, A. 4)
  2. "Streams for the Future"
  3. "Adopt a Stream"
  4. Canoe Trail Brochure (5.21, B. 1)

## 5.6 Conclusions

A full plate of action items is offered here to provide the land manager with a coherent direction that will address the objectives in Chapter II. By providing appropriate, high quality signing, and coordinating improvements and enhancement of existing facilities, the river recreation setting can be greatly improved. Offering suitable and timely information will positively supplement our visitor's stay on the river. Preparing a needs analysis for GIS that includes a complete spectrum of information required to adequately manage the outdoor recreation resource on the district will not only make the system work for us, but will leave tracks for new district personnel to follow so that management strategy will not have to be continually re-invented. Entering into partnerships with commercial interests and with the Missouri Department of Conservation and other individuals can only increase a healthy sense of ownership in the river resource and highlight its intrinsic value to all of us.

Simply to address nothing more than the river, while ignoring other parts of the river visitors recreation experience, contributes to further fragmentation of recreation management. The scope of application is wide: from the moment these folks cross over the forest boundary, through their stay with us, until they either drive or float off the Mark Twain National Forest. While the risk of not doing anything may not be readily apparent to either the visitor or land manager, benign neglect hardly benefits anyone. Finally, offering increased customer satisfaction with a high quality recreation experience will be the real payoff.

## PHOTOGRAPH INDEX

- 1) **Big Springs**
- 2) **Big Springs Outlet**
- 3) **North Fork River (North of CC Highway)**
- 4) **Blue Springs (at North Fork Recreation Area)**
- 5) **Riverside at the North Fork Recreation Area**
- 6-8) **North Fork River inside the Devil's Backbone Wilderness**

## LITERATURE CITED

1. United States Department of Agriculture. "America's Great Outdoors - National Recreation Strategy." Forest Service, (1988).
2. Rafferty, Milton D. **The Ozarks, Lands & Life** (1980): 7-10, 57-60, 193-203.
3. Vineyard, Jerry D.; Feder, Gerald L.; "Springs of Missouri", **Missouri Geological Survey and Water Resources**. (1974): 160-171.
4. Kuska, James J.; "Biological Approach to River Planning and Management." **Proceedings: River Recreation Management and Research Symposium**, North Central Experiment Station (1977): 296-303.
5. Jacobs, Gerald. "Conflict in Outdoor Recreation - The Search for Understanding." **Utah Tourism & Recreation Review** Vol 6:4, (1977).
6. Peirce, Hagstrom. **The Book of America**, Warner Books (1984): 593-603.
7. Jensen, Marvin O. "Back Country Managers Need Social Science Information." **USDA Forest Service Technical Report**, North Central Experiment Station, (1981) NC-63:52-55.
8. Hammitt, William E.; McDonald, Gary D.; and Cordell, H. Ken. "Conflict Perception and Visitor Support for Management Controls." University of Minnesota Agricultural Experimental Station, Miscellaneous Publication (1982): 45-48.
9. Smith, A.C.: Wellman, J.D.; Raggenburk, J.W.: and Killeen, K. "Priorities for River Recreation Management in the Southern Appalachians." **Southern Journal of Applied Forestry** (Nov. 1983): 185-189.
10. Priesmitz, Michael F.; Harrison, James; "Managing Corridors in Multiple Ownerships." **Proceedings: River Recreation Management and Research Symposium**, North Central Experiment Station (1977): 183-186.
11. **World Almanac** Newspaper Enterprise Association, Inc. (1989): 812-813.
12. **Outdoor Recreation in a Nation of Communities: Action Plan for Americans Outdoors**, A Report of the Task Force on Outdoor Recreation Resources and Opportunities to the Domestic Policy Council, (1988): 88-90.

## REFERENCE BIBLIOGRAPHY

1. Westenborg, Lee; Jubenville, Alan. "River Recreation Management Research: A Decision-Making Framework Applied to the Kenai River." **Agroborealis** vol. 17, no. 2 (1985): 43-48.
2. McLaughlin, William J.; Krumpe, Edwin E.; Paradice, W.E.S. "Do River Floaters Perceive River Segments Differently? Should Managers?" University of Minnesota, Agriculture Experiment Station Miscellaneous Publication. (1982): 7-13.
3. McAvoy, Leo. "Management Techniques Preferred by Users and Landowners Along a State River." University of Minnesota, Agriculture Experiment Station, Miscellaneous Publication. (1982): 20-25.
4. Norman, William C.; Lime, David W.; Roggenbuck, Joseph W. "New Directions in River Resource Management: A Look at Agency-Outfitter Partnerships." **Western Wildlands**, vol 15:3 (1989): 18-23.
5. **Proceedings: 1985 National Outdoor Recreation Trends Symposium II.** Department of Parks, Recreation and Tourism Management, Clemson University (1985).
6. **Proceedings: River Recreation Management and Research Symposium.** North Central Forest Experiment Station (1977).
7. Stankey, George H. "Some Social Concepts for Outdoor Recreation Planning." Forest Service, Intermountain Forest and Range Experiment Station, Missoula, Montana; Miscellaneous Publication (1974).



America's Great Outdoors

## APPENDICES

**Mark Twain National Forest**

## APPENDIX A

### **Management Prescriptions and Desired Future Conditions** for National Forest System lands adjacent to the North Fork River.

#### **Management Prescription 5.1**

This prescription applies to wilderness.

#### **Desired Future Condition**

The desired future condition for the Devil's Backbone will be designed primarily by nature.

The composition of the various forest types will over time approach the climax stage of forest succession. Trees will achieve their biological rotation ages and regeneration will occur naturally. Shade tolerant species will increase. Wildlife populations dependant on old growth vegetation and areas of low human disturbance will increase. Evidence of human disturbances will become less noticeable as the area matures and motorized activity is diminished. Opportunities for a wilderness experience will be enhanced as the vegetation matures.

The desired future condition is basically an area that:

- (1) Features substantially natural ecological conditions and,
- (2) Offers the visitor outstanding opportunities for solitude in their pursuit of a primitive and unconfined recreation experience.

#### **Management Prescription 6.1**

This prescription features management of natural vegetative communities and their successional stages under limited investments which emphasize a nonmotorized semi-primitive forest environment.

#### **Desired Future Forest Condition**

The Desired Future Condition for opportunity areas 6.11 (Spring Creek) and 6.12 (Steam Mill) are to maintain and enhance those attributes of the standards and guidelines described in the Land Resource Management Plan, Mark Twain National Forest (pages IV-165 through IV-174). To implement these overall objectives for the future condition it is important to consider the specific similarities of these areas, yet describe subtle differences that are to be considered to manage for the desired future condition.

Both areas have a developed recreation complex managed under 3.4 guidelines as inclusions. There is no question that management within the 6.1 areas effects these developed recreation sites as they are not island onto themselves. The

desired future condition is to coordinate all recreational activities in the developed sites and the semi-primitive non-motorized 6.1 areas to enhance one another. The natural vegetation community management emphasis is used to maintain the highest possible visual quality for visitors traveling the corridors to the developed recreation areas of Noblett and North Fork and to the organizational camp "Hammonds Mill Camp". Other opportunity area descriptions have already recognized maintenance of visual quality on CC Highway and AP Highway.

The desired future condition will re-establish past natural diversity of the vegetation. Pine plantations will, through management, become a more natural Forest structure. Where rows once could be seen, there will become a random spacing of large diameter pines mixed with oak. Present and future management will move some of the area to a "big tree" appearance, while other areas will be allowed to mature without disturbance. Management of vegetation will be articulate enough to maintain natural appearances, but still maintain needed specialized wildlife habitats with the low investment emphasis.

Both areas will provide high quality dispersed recreational experiences with the many miles of horse and hiking trails. Steam Mill area will be able to enhance and be compatible with the dispersed use that occurs with the Devils Backbone Wilderness area. Opportunities exist to increase public awareness of the natural community and historical appreciation with an interpretive trail in the vicinity of the Hammonds Mill Organizational Camp, which is an old CCC camp with several of the original structures in existence. The diversity of the recreational experiences is increased with a tie in of such a trail and the Ridge Runner National Recreation Trail. Awareness of this trail itself may change where it and the Ozark Trail cross paths. The Spring Creek area will give the trail users opportunity to come into contact with the streams of Spring and Noblett Creeks. The Steam Mill Hollow area will allow the trail visitor to come into contact with the large stream course of the North Fork of the White River.

### **Management Prescription 6.3**

This prescription provides temporary management of a variety of areas that have potential for "special area" designation other than wilderness. These areas reflect public issues or management concerns for the protection of unusual environmental, recreational, cultural, and historical resources and for scientific or educational studies. Candidate areas for national river status are also included in this management prescription.

### **Interim Potential Classification - North Fork of White River**

These determinations are based on a review of that portion of the stream within the exterior boundaries of the Mark Twain National Forest and factors such as the amount and location of ownerships, the quality of the stream and land

corridor, public use patterns, carrying capacity, existing public access, existing service to the public, the presence of other state and federal agencies on the stream, and the costs of establishing a Forest Service "presence" on the stream and administering the area.

The determinations were made that:

1. The portion of the river within the Mark Twain National Forest should be considered two segments: milepost 1 to 18 and milepost 18 to 30.
2. The best potential classification for the milepost 1 to 18 segment would be other than a National classification. This classification is based on the high frequency of road access, buildings and the high impact of agriculture.

No milepost section of the 17 mile section is free of such impacts. However, to avoid jeopardizing consideration for eventual classification, National Forest land within the corridor will be managed to meet at least the Recreation category.

3. The best potential classification for the milepost 18 to 30 segment would be "Recreation".

## APPENDIX B

Frame 1	<b>America's Great Outdoors</b>	Recreation
Frame 2	<b>Windows on the Past</b>	Cultural Resources
Frame 3	<b>Animal Inn</b>	Wildlife Management
Frame 4	<b>Rise to the Future - Fish Your National Forests</b>	Fisheries
Frame 5	<b>Change on the Range</b>	Rangeland Management
Frame 6	<b>Prevent Forest Fires</b>	Fire Prevention
Frame 7	<b>Devil's Backbone</b>	Wilderness

America's Great Outdoors

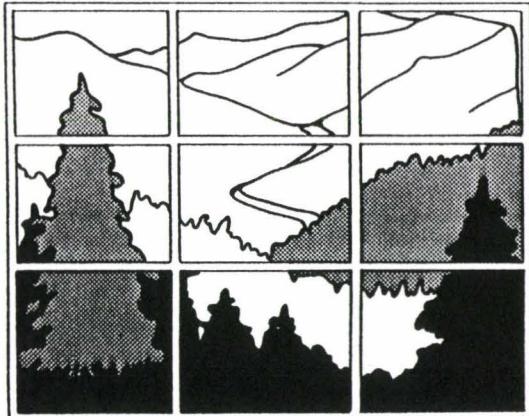


Mark Twain National Forest

America's Great Outdoors

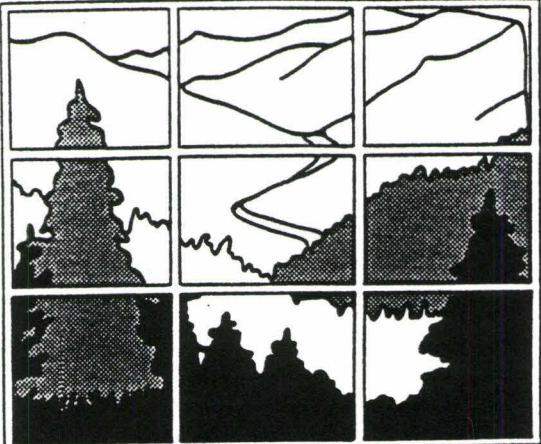


Mark Twain National Forest



## Windows On The Past

Mark Twain National Forest



# Windows On The Past

Mark Twain National Forest

Wildlife



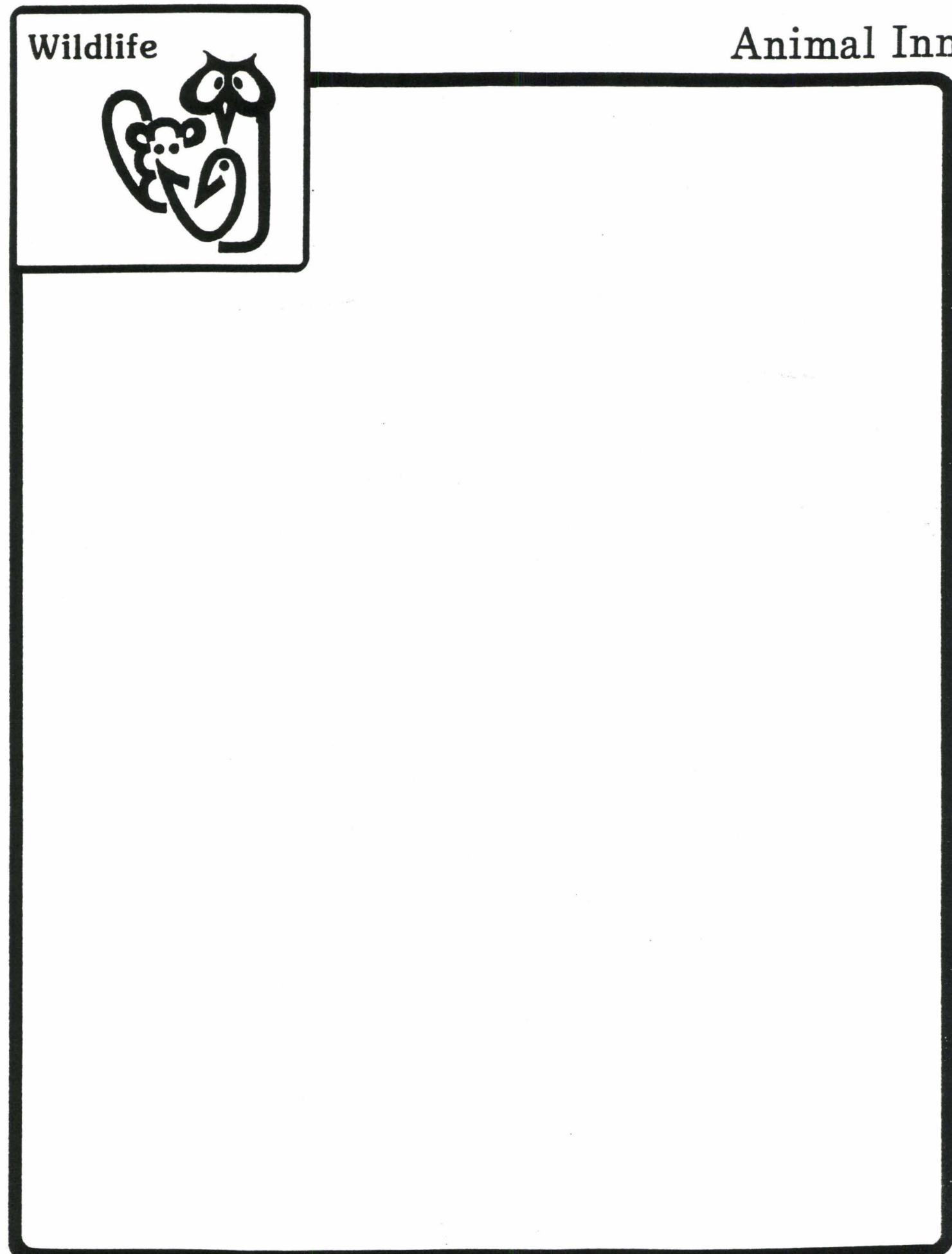
Animal Inn

Mark Twain National Forest

Wildlife



Animal Inn



Mark Twain National Forest

Rise to the  
**FUTURE**



Fish Your National Forests

Mark Twain National Forest

Rise to the  
**FUTURE**



Fish Your National Forests

Mark Twain National Forest



## Change On The Range

Mark Twain National Forest



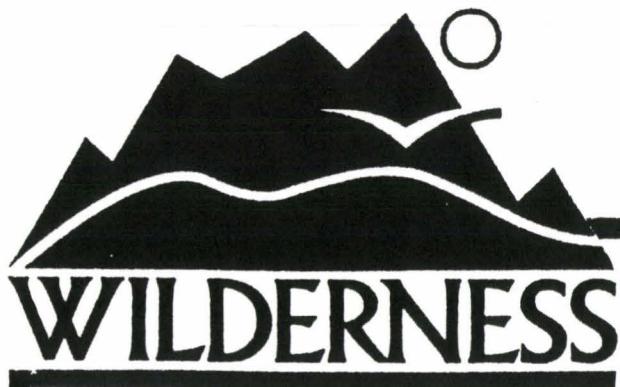
Change On The Range

Mark Twain National Forest



**PREVENT FOREST FIRES**

**Mark Twain National Forest**



Devil's Backbone

Mark Twain National Forest

Respond to:

**APPENDIX C**

David M. Schmidtman, District Ranger  
**Willow Springs Ranger District**  
**Mark Twain National Forest**  
P.O. Box 99, Old Springfield Highway  
Willow Springs, Missouri 65793

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**Public Involvement Form for Interpretive Sites**

1. *North Fork River*  
Name of interpretive area(s)
2. Of the following site attributes, which are key attractions?  
1 = greatest, 2 = moderate, 3 = lowest.  
You may give more than one attraction the same number rating.
  - a. river/aquatic resources \_\_\_\_\_
  - b. local geology \_\_\_\_\_
  - c. local geography \_\_\_\_\_
  - d. local history \_\_\_\_\_
  - e. prehistoric site(s) \_\_\_\_\_
  - f. springs \_\_\_\_\_
  - g. Devil's Backbone Wilderness \_\_\_\_\_
  - h. other \_\_\_\_\_
  - i. other \_\_\_\_\_
3. Which stories or themes would you like to see interpreted? Circle choices.
  - a. flora and fauna of Missouri Ozark rivers
  - b. Karst geography of the Missouri Ozarks
  - c. historical use of North Fork River through time: Indians, millers, Forest Service
  - d. other \_\_\_\_\_
  - e. other \_\_\_\_\_
  - f. other \_\_\_\_\_
4. What tools and techniques do you think are appropriate for this area?  
Circle choices.
  - a. Framed poster on existing bulletin boards (1)
  - b. Separate bulletin board with the interpretive information (1)
  - c. Signed pathway leading to each attraction with interpretive signs at each stop.
  - d. Kiosk style (3 sided bulletin board) interpretive display (1)
  - e. Signs with audio (tape) interpretation
  - f. Brochures/pamphlets/fliers
  - g. Oral history quotes (vignettes)
  - h. other \_\_\_\_\_
  - i. other \_\_\_\_\_
  - j. other \_\_\_\_\_

(1) North Fork Recreation Area

## APPENDIX C

5. What are the strong and weak aspects of access to and facilities within the North Fork Recreation Area

FACILITY	GOOD	ADEQUATE	POOR	NEED	DON'T NEED
a. Parking					
b. Road					
c. Road Signs					
d. Rest Rooms					
e. Trails					
f. Canoe Launch					
g. Handicap Facilities					
h. Picnic Tables					
i. Hazards					
j. Camp Grounds					
k. Other					
l. Other					
m. Other					
n. Other					

6. Who do you think our audience will be? Designate by using the terms: none, very few, some, many, most, only.

- a. canoeists/floater \_\_\_\_\_
- b. picnickers \_\_\_\_\_
- c. campers \_\_\_\_\_
- d. hikers \_\_\_\_\_
- e. urban people \_\_\_\_\_
- f. local people \_\_\_\_\_
- g. tourists \_\_\_\_\_
- h. retired people \_\_\_\_\_
- i. school children \_\_\_\_\_
- j. people who know some general Ozark history \_\_\_\_\_
- k. people who are not familiar with the Missouri Ozarks \_\_\_\_\_
- l. people who are at the site primarily to be with others \_\_\_\_\_
- m. people who want to see wildlife \_\_\_\_\_
- n. people who want to fish \_\_\_\_\_
- o. people who want to take photographs \_\_\_\_\_
- p. people who want to learn something new \_\_\_\_\_
- q. other \_\_\_\_\_
- r. other \_\_\_\_\_
- s. other \_\_\_\_\_

7. Other Comments:



RECREATION PLANNING and LANDSCAPE MANAGEMENT  
**Mark Twain National Forest**

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE - EASTERN DIVISION

		DESIGN:	
		DENNIS FEHLER	
		LANDSCAPE ARCHITECT	
		D.P.F.	DRF
		DRAWN	SURVEY
		REVISION	REVISION
SHEET TITLE		NORTH FORK	
RIVER ACCESS			
SCALE		1" = 10'-0"	
(A) 40' X 60')			
SHEET NO.		1 OF 1	

RECOMMENDED:	DATES:
<i>Frederick G. Konig</i> DISTRICT RANGER	4/23/80
APPROVALS:	
FOREST SUPERVISOR	
DIRECTOR, RECREATION	



FILE N<sup>o</sup> I-17-33  
SITE N<sup>o</sup> 4,1.

U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE - DIVISION OF NATIONAL  
DIVISION OF RECREATION AND LANDSCAPE  
**NORTH FORK**  
CAMP PIEMONTE GROUP  
MACK TAHAN NATIONAL FOREST

SHEET 1 OF 2  
SURVEY: J.W. L.A.  
DESIGN: <sup>9</sup> 10000  
RECOMM'D: *GE PGD*  
SO APPROVAL: *HJD*

N O R T H E A S T

DESIGN:	
LANDSCAPE	ARCHITECT
DRAWN	SURVEY

# RECREATION PLANNING and LANDSCAPE MANAGEMENT Multi-national Element

# Mark Twain National Forest

RECOMMENDED:	DATES:
DISTRICT RANGER APPROVALS:	
FOREST SUPERVISOR	

FILE NO. I-17-33  
SITE NO 44

U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE - REGION NINE  
DIVISION OF RECREATION AND LANDS

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COUNTY OZARK  
DISTRICT WILLOW  
LOCATION SECTION  
SCALE 1:32,000  
CONT'D. INT. 2  
AREA

THE  
DARLING'S  
HOME  
CAMP PICNIC  
MARK TWAIN NATIONAL  
MUSEUM  
MISSOURI

MATCH LINE SHEET

b

N

O

R

T

H

E

F

P

SHEET TITLE

DESIGN:	LANDSCAPE ARCHITECT
DRAWN	SURVEY
REVISION	REVISION

RECREATION PLANNING and LANDSCAPE MANAGEMENT

# Mark Twain National Forest

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE - EASTERN REGION

RECOMMENDED:	DATES:
DISTRICT RANGER	
APPROVALS:	
FOREST SUPERVISOR	
DIRECTOR, FOREST	



FOR TOPOGRAPHY SEE SHEET 1 OF 3

MATCH LINE STREET 1

APPENDIX D

APPENDIX E

